

**Schena, Cristeen**

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**From:** Aram Varjabedian <avarjabedian@woodardcurran.com>  
**Sent:** Monday, January 08, 2018 1:20 PM  
**To:** david.burns (david.burns@state.ma.us); Turin, David; jstruzziery@town.hull.ma.us  
**Cc:** Frank Cavaleri; Robert Scott; Bill Boornazian; Kate Roosa; Jim Dow; Lemnios, Philip (plemnios@town.hull.ma.us)  
**Subject:** RE: Hull - MA0101231 - Freezing Process condition - UPDATE  
**Attachments:** 20180108\_125831.jpg; 20180108\_125849.jpg

Good morning:

I wanted to provide an update on the facility status. We were able to thaw out the frozen gear drive for the secondary clarifier and restart at 9:15 am this morning. RAS flow with solids return to the aeration tank was evident immediately. Aeration system blower was re-started also.

Clarifier floating/frozen solids broken up and thawing out very well. Composite sampling of the facility effluent continues to track effluent quality and improve. We collected a composite effluent sample for 1/7-1/8 period, and will continue sampling continuously for remainder of week to track process performance.

Should you have any questions, please don't hesitate to contact me at any time.

Sincerely,

Aram

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COMMITMENT & INTEGRITY DRIVE RESULTS

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**From:** Aram Varjabedian  
**Sent:** Saturday, January 06, 2018 3:47 PM  
**To:** david.burns (david.burns@state.ma.us) <david.burns@state.ma.us>; Turin, David (Turin.David@epa.gov) <Turin.David@epa.gov>; jstruzziery (jstruzziery@town.hull.ma.us) <jstruzziery@town.hull.ma.us>  
**Cc:** Frank Cavaleri <fcavaleri@woodardcurran.com>; Robert Scott (rscott@woodardcurran.com) <rscott@woodardcurran.com>; Bill Boornazian <wboornazian@woodardcurran.com>; Kate Roosa (kroosa@woodardcurran.com) <kroosa@woodardcurran.com>  
**Subject:** Hull - MA0101231 - Freezing Process condition

Good Afternoon:

I am emailing to inform everyone of the current conditions at the Hull WPCF. Over the past 2 weeks, with the extreme cold conditions we have been battling freeze-ups in our #2 secondary clarifier. The skimming mechanism on the rake arm has been stopping at the scum beach plate due to frozen floating sludge. We have tried water spray/stream to keep the material fluid and the amount of material to a minimum, and this has worked satisfactorily up until most recently. We have also applied salt to thaw the ice chunks, and had additional personnel on site to try to break up the solids to allow the mechanism to continue running.

Yesterday, we had a vactor truck company in to vacuum out the center ring, but we were unable to continue with to the outer ring, since the outside temperatures plunged, and the truck froze up and was unable to off load. Their work could not continue.

The #2 SC rake mechanism has been limited to RAS flow from only the bottom hopper, since the draft tube function ceased last year, most likely due to a rotted sludge pipe in the center column, below the concrete floor. This hasn't been confirmed with this particular unit, but likely in the #1 SC, based upon recent investigation.

Presently both primary clarifiers are on line, secondary aeration and RAS was run through today mid-day, and now the aeration blower is off, to retain the remaining biomass.

With the recent storm surge, excessive plant flows were seen at the WPCF on 1/4/17. The high flows pushed the floating sludge problem to a higher level and a lot of the frozen material in the inner center ring started to break up and thaw out.

We will be adjusting our chemical feed for disinfection up to meet adequate disinfection. We hope that moderating temperatures after Sunday will allow us to get this clarifier or the other unit on line.

We had considered putting SC#1 back on line, and had it on line for a short time due to the storm flows, but we would have encountered the same issue with floating sludge freezing up, and unable to keep the rake arm moving..

Our plan will be to refill up SC#1 on Monday and hopefully resume full operation of the secondary system.

I will provide an update as conditions change. Should you have any questions, please don't hesitate to contact me at any time.

Sincerely,

Aram

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